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Water Efficient Irrigation Systems

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Irrigation System Efficiency

- Uniformity
  - How evenly the water is applied
- Efficiency
  - How much of the applied water is wasted beyond the plant or soil needs
- High uniformity is a prerequisite to high water efficiency

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System Composition

- Initial Design
- Irrigation Hardware
  - Sprinklers & nozzles
  - Valves & controllers
  - Drip components
- Installation & Maintenance
  - Initial installation
  - Repairs & adjustments

Uniformity

- Scheduling → Efficiency

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Achieving Uniformity

- Good design practices
- Sprinklers & nozzles
  - Understanding flow rates / operating pressures
  - Sprinkler type that matches site conditions
- Valves & controllers
  - Allows for precise control (automation)
  - Separate zones for different climatic zones
- Water efficient components
  - Drip irrigation – localized application of water
- Installation according to initial design
- Maintain uniformity after system repairs

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Uniformity → Efficiency

- Assuming a uniform system has been designed, installed, and will be maintained…
- Proper scheduling is critical
  - Contemporary strategies to improve efficiency:
    - Operator education
    - Rain shutoff devices
    - Soil moisture sensors
  - Emerging technologies that increase efficiency:
    - ET - based controllers
    - Central control
    - Borrow technologies from other industries

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Management is the Key

- Uniform application of water is possible today – with products that already exist
- The quality of installation is difficult to control – but critical
- Scheduling water application to meet the demands of a particular landscape is the next frontier for our industry

Water-Efficient Irrigation Systems

ARE POSSIBLE !